Filter Strip

Definition: A strip or area of vegetation for removing sediment and other pollutants from runoff.

Purpose: To remove sediment and other pollutants from runoff by filtration, deposition, infiltration, absorption, adsorption, decomposition, and volatilization, thereby reducing pollution and protecting the environment.

Conditions Where Practice Applies: This practice applies at the lower edge of disturbed areas or above structural measures such as waterways and diversions, or adjacent to streams, ponds, and lakes.

Planning Considerations: Type and quantity of pollution must be determined. Slopes, soils, vegetative species, construction timing, need for irrigation, method of operation and maintenance must be considered. If the vegetated filter has outlet flow, it must be nonerosive.

Design Criteria

General: A soils report prepared by a qualified person shall be part of the documentation attesting to the feasibility of the vegetated filter system.

Grass species shall be such that the grass stems will remain upright during any design flow. For flow depths of .1 ft or less use n = 0.04. Where flow will be up to .5 ft, use n = 0.07.

Vegetation and Protection: Seedbed preparation and seeding shall be in accordance with the standard for Critical Area Planting. The type of vegetation shall be specified on the plans.

Fences will be installed around filter strips where it is necessary to prevent damage caused by livestock or other use.

Filter strips shall have a flow length of at least 10 ft for slopes less than 1 percent. Flow length shall increase proportionally up to a minimum of 33 ft for 30 percent slopes.

Specifications

All trees, stumps, roots, rocks, brush, and similar materials that can interfere with installing the vegetated filter shall be removed. The materials shall be disposed of in a manner that is consistent with the surrounding environment and with proper functioning of the vegetated filter.

When required, the filter shall be shaped to the grade and dimensions shown on the plan or as staked in the field. Topsoil shall be stockpiled and spread to the required grade and thickness. Excess spoil shall be disposed of in areas where it does not interfere with the required flow characteristics of the vegetated filter.

Construction operations shall be carried out in such a manner and sequence that erosion and air and water pollution will be minimized and held within legal limits. All disturbed areas will be graded smooth and blend with the surrounding ground, prior to seeding operations.

A protective cover of vegetation shall be established on all exposed surfaces of the filter strip and spoil areas. Lime and fertilizer will be spread at the rate shown on the drawings and will be disked into the soil to a depth of 4 inches to prepare a seedbed. Seed and mulch will be spread at the rate shown on the drawings. Where soil or climatic conditions preclude the use of vegetation and protection is needed, nonvegetative means such as mulches or gravel may be used. In some cases, temporary vegetation may be used until conditions are right for establishment of permanent vegetation. When required, the filter strip shall be fenced, as shown on the drawings, to protect the vegetation.